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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/743,896	12/22/2003	Dennis William Mueller	191314-1011	1987

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EXAMINER

HO, ALLEN C

ART UNIT

PAPER NUMBER

2882

DATE MAILED: 10/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/743,896

Applicant(s)

MUELLER ET AL.

Examiner

Allen C. Ho

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

Page 10, line 25, "20" should be replaced by --12--.

Appropriate correction is required.

Claim Objections

2. Claim 20 is objected to because of the following informalities: Claim 20 depends on claim 2, which has been cancelled. Appropriate correction is required.

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 1 and 3-22 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 2, 5, 7- 9, 12, 16-19, 27-29, 31-35, and 38-

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40 of U.S. Patent No. 6,697,453 B1. Although the conflicting claims are not identical, they are not patentably distinct from each other.

With regard to claims 1, 3, and 20, U. S. Patent No. 6,697,453 B1 claims an apparatus for examining the internal structure of a material, the apparatus comprising: an x-ray source adapted to emit an x-ray beam at the surface of a target area of the material; an x-ray adapted to detect x-rays diffracted from the target area of the material; and a mounting plate having the x-ray source and the x-ray detector rigidly mounted thereto, wherein the mounting plate is adapted to have the x-ray source and the x-ray detector rigidly mounted thereto in a finite (multiple) number of alignment (claims 1, 12, 16).

With regard to claim 4, U. S. Patent No. 6,697,453 B1 claims the apparatus of claim 1, wherein the mounting plate defines multiple sets of alignment bores, each set of alignment bores configured to align and rigidly couple the x-ray source and the x-ray detector to the mounting plate (claim 12).

With regard to claim 5, U. S. Patent No. 6,697,453 B1 claims the apparatus of claim 1, further including: a photo-spectrum analyzer mounted to the mounting plate and adapted to measure spectral intensity across a range of frequencies for electromagnetic radiation emitted from the target area of the material (claims 5, 9).

With regard to claim 6, U. S. Patent No. 6,697,453 B1 claims the apparatus of claim 1, further including: an x-ray source controller in communication with the x-ray source, the x-ray source controller adapted to provide electrical power and initiation and operation parameters to the x-rays (claims 7, 9, 12).

With regard to claim 7, U. S. Patent No. 6,697,453 B1 claims the apparatus of claim 1, further including: a storage device in electrical communication with the x-ray detector, wherein the storage device stores information related to the angular dispersion of the diffracted x-rays (claim 8).

With regard to claim 8, U. S. Patent No. 6,697,453 B1 claims a method for examining the internal structure of a component, the method comprising the steps of aligning an x-ray source and an x-ray detector in one of a finite (multiple) number of a rigid and predetermined orientations; irradiating a target area of a surface of a component with an x-ray beam from the x-ray source, wherein the x-ray beam is incident upon a particular crystallographic plane of atoms at the Bragg angle for that plane of atoms in the component; detecting x-rays diffracted from the target area of the component with an x-ray detector; and determining an indicator of the internal structure from the intensity as a function of angular dispersion of the diffracted x-rays detected by the x-ray detector (claims 27, 33).

With regard to claims 9 and 10, U. S. Patent No. 6,697,453 B1 claims the method of claim 9, wherein the indicator of the internal structure is a parameter used in the parameterization of the number of x-rays counted as a function of angle (claims 28, 29, 34, 35).

With regard to claims 11 and 12, U. S. Patent No. 6,697,453 B1 claims the method of claim 9, wherein the step of identifying the composition of the component includes the steps of: measuring across a frequency range the intensity of light fluoresced from the composition to determine the spectral characteristics of the composition; and comparing the spectral characteristics of the composition with spectral characteristics of known materials (claim 33).

With regard to claim 13, U. S. Patent No. 6,697,453 B1 claims the method of claim 8, further including the step of: mounting the x-ray source and the x-ray detector rigidly and removably on a mounting plate (claims 27, 38).

With regard to claim 14, U. S. Patent No. 6,697,453 B1 claims the method of claim 8, further including the step of: determining the remaining lifetime of the component (claims 31, 39).

With regard to claim 15, U. S. Patent No. 6,697,453 B1 claims the method of claim 8, wherein the component is part of a system and is scanned *in situ* (claims 32, 40).

With regard to claim 21, U. S. Patent No. 6,697,453 B1 claims the method of claim 8, wherein the intensity of the diffracted x-ray exhibits a peak at a given angle θ , the approximate Bragg angle for the diffracting crystallographic plane of atoms (claims 27, 33).

With regard to claim 22, U. S. Patent No. 6,697,453 B1 claims the method of claim 8, further including the step of: mounting the x-ray source and the x-ray detector rigidly and removably (claims 27, 38).

With regard to claims 16 and 19, U. S. Patent No. 6,697,453 B1 claims an apparatus for non-destructively examining the internal structure of a component, the apparatus comprising: an x-ray source; an x-ray detector; a mounting system; and a housing (claims 1, 2, 16, 17).

With regard to claim 17, U. S. Patent No. 6,697,453 B1 claims the apparatus of claim 16, wherein the mounting system is an interior of the housing (claim 18).

With regard to claim 18, U. S. Patent No. 6,697,453 B1 claims the apparatus of claim 16, wherein the mounting system includes a plate mounted to an interior wall of the housing (claim 19).

Response to Arguments

5. Applicant's arguments filed 22 July 2004 with respect to claims 1, 2, 5, 6, 13, and 16 have been fully considered and are persuasive. The objection of claims 1, 2, 5, 6, 13, and 16 has been withdrawn.

6. Applicant's arguments filed 22 July 2004 with respect to claims 1, 6-9, 11, 13-15 have been fully considered and are persuasive. The rejection of claims 1, 6-9, 11, 13-15 has been withdrawn.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen C. Ho whose telephone number is (571) 272-2491. The examiner can normally be reached on Monday - Friday from 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward J. Glick can be reached at (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Allen C. Ho
Patent Examiner
Art Unit 2882

04 October 2004